

GEOLOGY

The rocks exposed on Star Island are metamorphic and igneous. Geologists call them gneiss ("nice") and granite respectfully. They were formed from high heat and molten rock material that cooled and crystallized, deep inside the crust. Long periods of weathering and erosion have now exposed these rocks.

Much of the Island is granite and pegmatite. Pegmatites are granite like, but with larger mineral grains. As you walk the island's rocky coast you will see a darker, "foliated" rock in the gray gneiss and granite. These are schists. Black in color, these rocks are older than the gneiss and granite that intruded into them.

All these rocks have been deformed by plate collisions, especially the collision that pushed all the continents together to form Pangaea. As Pangaea broke up, during Jurassic time, cracks that formed in the bedrock were filled with a brown-black molten rock. Called diabase rock, these long narrow intrusions cut through the island as a number of northeast-southwest trending dikes. These diabase dikes are more easily eroded than the other rocks. You will find them today in the bottom of a number of long narrow trenches.

Since the intrusion of the dikes, Star and the other eight islands that make up the Isles of Shoals, have been scraped and smoothed by the glacial ice of the last ice age and scoured clean by the sea. What little soil we see today has accumulated since then by weathering of the bedrock and decay of the sparse vegetation.¹

* Star Island is open to the public on a seasonal basis. Please be reminded that the Star Island Corporation owns all buildings and facilities. All items (including trash) must be carried out with you when you leave. Watch your footing. Rocks may be loose and slippery. Poison ivy abounds in vegetated areas. Should an emergency arise during your visit, please go to the hotel front desk for assistance.

TITLE LXII of the NH CRIMINAL CODE CHAPTER 634 DESTRUCTION OF PROPERTY Section 634:2.XI states:

Under this law any person convicted of criminal mischief against a natural geological formation, site, or rock formation which has been designated as a natural area or landmark shall be guilty of a class A misdemeanor.

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¹ Bothner, W.A., 2009, Geological Society of New Hampshire 2009 Summer Field Trip Star Island guide.

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THE GEOLOGY OF STAR ISLAND

Isle of Shoals, NH

**A GEOLOGIC HISTORY
AND GEOLOGIC WALK*
OF STAR ISLAND**

GEOLOGY WALK* OF STAR ISLAND

HOW MANY OF THESE FEATURES CAN YOU FIND?



Granites and pegmatites.



Island bedrock smoothed by the glacial ice.



Eroded dike, leaving a long narrow fissure, south of Moody Cave.



Eroded Gazabo dike. How many other dikes can you find on Star Island?



Original schist rock - part of a fold, going down and to the right.



Glacial erratic (rock moved here by the glacial ice) .



Glacial pothole eroded by sediment laden meltwater.